

# SOM-P101 / SOM-P102

Pico-ITX Motherboard



## KEY FEATURES

- Intel® Apollo Lake SoC Processor
- 1 x 204-pin SO-DIMM up to 8GB DDR3L 1866 MHz
- 1 x USB 3.1 Gen1, 2 x USB 2.0, 1 x M.2 Key E, 2 x COM, 1 x mSATA/mini-PCIe, 1 x SATA3
- 1 x MIO slot (SOM-P101)
- 1 x Intel 1 Gigabit LAN
- Supports dual display, 1 x HDMI 1.4b, 1 x LVDS
- 12V DC-In

## SPECIFICATIONS

| Form Factor | SOM-P101                   | SOM-P102 |
|-------------|----------------------------|----------|
| Dimensions  | PICO-ITX (3.9-in x 2.8-in) |          |

### Processor System

| CPU     | Intel® Apollo Lake SoC Processor<br>SOM-P101J<br>(J3455, QC, 1.5 GHz, 10 W)<br>SOM-P101D<br>(N4200, QC, 1.1 GHz, 6 W)<br>SOM-P101L<br>(N3350, DC, 1.1 GHz, 6 W) | Intel® Apollo Lake SoC Processor<br>SOM-P102J<br>(J3455, QC, 1.5 GHz, 10 W)<br>SOM-P102D<br>(N4200, QC, 1.1 GHz, 6 W)<br>SOM-P102L<br>(N3350, DC, 1.1 GHz, 6 W) |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chipset | SoC                                                                                                                                                             |                                                                                                                                                                 |
| Socket  | FCBGA1296                                                                                                                                                       |                                                                                                                                                                 |
| BIOS    | AMI SPI 128 Mbit                                                                                                                                                |                                                                                                                                                                 |

### Memory

|            |                             |
|------------|-----------------------------|
| Technology | Dual Channel DDR3L 1866 MHz |
| Capacity   | 8 GB                        |
| Socket     | 1 x 204-pin SO-DIMM         |

### Graphics

|              |                                                    |
|--------------|----------------------------------------------------|
| Controller   | Intel® Gen9 Graphics DX 12                         |
| HDMI         | HDMI 1.4b<br>Max resolution up to 4096 x 2160@24Hz |
| DisplayPort  | N/A                                                |
| VGA          | N/A                                                |
| LVDS         | Dual channel 24 bit up to 1920x1200@60Hz           |
| eDP          | N/A                                                |
| DVI          | N/A                                                |
| MultiDisplay | Dual Display                                       |

### Expansion Slot

|                 |                                                                                |
|-----------------|--------------------------------------------------------------------------------|
| PCIe            | N/A                                                                            |
| PCI             | N/A                                                                            |
| mSATA/mini-PCIe | 1                                                                              |
| M.2             | 1 x Key E (2230) with PCIe x1 and shared USB 2.0 for Wireless                  |
| MIO             | 1, (HDMI or DP, 1 x USB3.0, 1 x USB2.0, 3 x PCIe x1, Line out, LPC bus, SMBus) |
|                 | N/A                                                                            |

### Audio

|           |                                                         |
|-----------|---------------------------------------------------------|
| Interface | Realtek ALC887, High Definition Audio. Line-out, Mic-in |
|-----------|---------------------------------------------------------|

### Ethernet

|                   |                                         |                                         |
|-------------------|-----------------------------------------|-----------------------------------------|
| Controller/ Speed | 1 x Intel® I210IT with 10/100/1000 Mbps | 1 x Intel® I210AT with 10/100/1000 Mbps |
| Connector         | 1 x RJ-45                               |                                         |

| Rear I/O    | SOM-P101          | SOM-P102 |
|-------------|-------------------|----------|
| HDMI        | 1 x HDMI 1.4b     |          |
| DisplayPort | N/A               |          |
| VGA         | N/A               |          |
| DVI         | N/A               |          |
| Ethernet    | 1 x 1 Gigabit LAN |          |
| USB         | 1 x USB 3.1 Gen1  |          |
| Audio       | N/A               |          |
| COM         | N/A               |          |
| PS2         | N/A               |          |

### Internal Connector

|                 |                                             |
|-----------------|---------------------------------------------|
| USB             | 1 x USB 2.0 (2 x 2.54 pitch header)         |
| COM             | 1 x COM1 (RS-232/422/485), 1 x COM2 (RS232) |
| Parallel        | N/A                                         |
| GPIO            | 4 x GPI + 4 x GPO                           |
| TPM             | N/A                                         |
| LVDS            | 1                                           |
| eDP             | 0                                           |
| VGA             | N/A                                         |
| SATA PWR Output | 1                                           |
| Speaker Header  | 1                                           |

### Storage

|       |                                      |
|-------|--------------------------------------|
| M.2   | N/A                                  |
| mSATA | 1 x Full size with SATA3 and USB 2.0 |
| SATA  | 1 x SATA3 (6Gb/s)                    |
| eMMC  | N/A                                  |

### Watchdog Timer

|          |                                  |
|----------|----------------------------------|
| Output   | From Super I/O to drag RESETCON# |
| Interval | 256 Segments, 0, 1, 2, ...255sec |

### Power Requirements

|           |                                                                                                                           |
|-----------|---------------------------------------------------------------------------------------------------------------------------|
| Input PWR | 12V DC-In                                                                                                                 |
| Power On  | AT/ATX Supported<br>- AT : Directly PWR on as power input ready<br>- ATX : Press button to PWR on after power input ready |

### Environment

|                    |                |
|--------------------|----------------|
| Operating Temp     | 0°C ~ 60°C     |
| Storage Temp       | -40° C ~ 85° C |
| Operating Humidity | 5% ~ 90%       |
| Storage Humidity   | 5% ~ 90%       |

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660